

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

| | | |
|-------------------------------------|---|---------------|
| THE APPLICATION OF BARKLEY LAKE |) | |
| WATER DISTRICT, (1) FOR A CERTIFI- |) | |
| CATE THAT PUBLIC CONVENIENCE AND |) | |
| NECESSITY REQUIRES THE CONSTRUCTION |) | |
| OF NEW PLANT FACILITIES; AND (2) |) | CASE NO. 9221 |
| SEEKING APPROVAL OF THE ISSUANCE OF |) | |
| CERTAIN SECURITIES; AND (3) FOR AN |) | |
| ORDER AUTHORIZING ADJUSTMENT OF |) | |
| WATER SERVICE RATES AND CHARGES |) | |

O R D E R

On November 21, 1984, Barkley Lake Water District ("Barkley Lake") filed its Application and Motion to reopen Case No. 8937, wherein it had sought Commission approval to increase its water service rates, authorization to construct a \$363,500 waterworks improvement project, and approval of its financing for the proposed project.

The Commission entered an Order on December 18, 1984, to establish the current case for consideration of this matter and incorporated Case No. 8937 herein by reference.

The proposed project financing includes \$1,500 from applicants for service in the proposed project area, a \$5,000 grant from the Commonwealth of Kentucky, a \$35,000 grant from Area Development Funds, and a \$322,000 loan from the Farmers Home Administration at 9 1/8 percent annual interest. Barkley Lake will issue waterworks revenue bonds as security for the loans. The repayment period for the loans will be 40 years.

Barkley Lake's water storage volume does not provide a supply that is adequate for the demands of summer usage by its customers. Water supply crises have occurred at times of greatest need during hot and dry summer months. Barkley Lake's proposed construction should satisfy its immediate water storage requirements and provide a reasonable reserve for the addition of customers in the future. Only four new customers will be added by this construction. Plans and specifications for this construction as prepared by Elrod-Dunson Consulting Engineers of Nashville, Tennessee, ("Engineer") have been approved by the Division of Water of the Natural Resources and Environmental Protection Cabinet.

The rates proposed, as reflected in Barkley Lake's billing analysis, would produce additional revenues of \$100,649 on an annual basis, an increase of approximately 33.5 percent. In order to determine the reasonableness of the construction project and the proposed rates, a hearing was conducted at the offices of the Commission in Frankfort, Kentucky, on May 8, 1984. At the hearing, Barkley Lake was instructed to have its accountant contact the Commission regarding a reevaluation of Barkley Lake's financial statements of September 30, 1983. This reevaluation was necessary to reconcile differences between Commission staff and Barkley Lake's accountant. On May 29, 1984, the accountant, after discussions with the Commission's staff, supplied revised financial data as requested. Barkley Lake was also requested to perform a hydraulic analysis for a peak period (first hot weekend of the summer). Due to inclement weather on each of the major

weekends during which tests were conducted, no new peaks were obtained during 1984. On September 6, 1984, Barkley Lake supplied a revised computer hydraulic analysis to the Commission based on field data taken May 24, 1984. The Engineer also furnished a computer analysis modeled on data obtained during the peak period of August 13, 1983. Bids were opened on October 23, 1984. All requested information has been filed.

The rates found reasonable herein will produce additional revenue on an annual basis of \$85,757.

ANALYSIS

TEST PERIOD

Barkley Lake has proposed and the Commission has accepted the 12-month period ending September 30, 1983, as the test period in this matter.

REVENUES AND EXPENSES

Barkley Lake had net operating loss for the test period of \$6,066. On May 29, 1984, Barkley Lake revised its income statement to reflect a net operating income of \$5,284. Barkley Lake proposed no pro forma adjustments other than changes to depreciation and interest expense to recognize the proposed construction project. However, the Commission has made the following additional adjustments:

Capital Expenditures

Barkley Lake filed as an exhibit in its application a revenue and expense statement for the fiscal year ended September 30, 1983. A comparative analysis was made with similar statements contained in the 1981 and 1982 Annual Reports filed

with this Commission. The analysis revealed a decided increase in certain operating expense accounts that could not be justified on its face. As a result the Commission requested copies of invoices to further study these differences. Analysis of the invoices by Commission staff indicated that some items included in test period expenses may have more appropriately been capitalized. On May 29, 1984, Barkley Lake filed a revised revenue and expense statement for the 12 months ended September 30, 1983. The revised statement omitted certain items that Barkley Lake considered, upon closer inspection, to be capital assets. Upon further review, the Commission is of the opinion that \$2,572 of other capital expenditures remain in the revised operating statement filed by Barkley Lake. Therefore, the Commission has reduced Barkley Lake's test period operating expenses by \$2,516.¹

Depreciation Expense

Barkley Lake's test period depreciation expense was \$77,208. It has been the Commission's practice in recent years to compute depreciation expense on the basis of original cost of the plant in service less contributions in aid of construction, as a utility should not be allowed recovery of that portion of plant which has been provided at zero cost.

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| ¹ Total Capital Items Expensed | \$2,572 |
| Less: Associated depreciation for these items (\$2,572 x composite rate of 2.19 percent) | |
| Adjustment | <u>56</u> <u>\$2,516</u> |

Barkley Lake's composite depreciation rate for plant in service was 2.19 percent.² The balance sheet of September 30, 1983, shows Barkley Lake's contributions in aid of construction to be \$2,456,384 or approximately 69 percent of the existing plant. Therefore, the Commission has reduced test period depreciation expense for existing plant by \$52,955.³

Although Barkley Lake proposed no adjustments to test period operating expenses, the Commission is of the opinion that depreciation associated with the proposed construction is a "known and measurable" expense. The Commission has used Barkley Lake's composite depreciation rate in determining the allowable depreciation for rate-making purposes to be associated with the proposed construction. Thus, the Commission has increased test period depreciation expense by \$7,052⁴ to account for the proposed construction. In addition, the \$11,350 adjustment made by Barkley Lake to capitalize items previously expensed has not been included in the calculation of depreciation expense. Applying the composite rate of 2.19 percent will increase depreciation expense

²
$$\frac{\text{Test period depreciation}}{\text{Gross Plant less Land}} = \frac{\$77,298}{\$3,530,171} = 2.19\% \text{ (Composite Rate)}$$

³

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|--|---------------------------------|
| Gross Plant | \$3,563,839 |
| Less: Contributions in Aid of Construction | 2,456,384 |
| Non-contributed Plant | <u>\$1,107,455</u> |
| X composite rate | x 2.19% |
| Allowable depreciation | <u>\$ 24,253</u> |
| Test Period Depreciation | <u>\$ 77,208</u> |
| Adjustment - Existing Plant | <u><u>\$ <52,955></u></u> |

⁴
$$\$322,000 \times .0219 = \$7,052.$$

by an additional \$249. Thus, the net adjustment to Barkley Lake's test period depreciation is a decrease of \$45,654.⁵

Other Operating Expenses

As stated earlier, no pro forma adjustments were proposed; however, the analysis within the engineering report included additional operating and maintenance expense of \$5,362 to cover the cost of electricity and the associated labor cost for a pump station installed in the proposed construction project. The Commission is of the opinion that this amount is reasonable and it has been included in the adjusted expenses.

In addition, on September 21, 1984, the engineer presented expenses of \$7,328 for services incurred to conduct the additional hydraulic analyses requested by the Commission. These costs should have normally been included in the overhead of the construction project; however, in this instance, due to the duplication of work performed for these tests, the Commission will allow the costs because the analyses and associated model can be used in the future. Therefore, the Commission will amortize this amount over 5 years, an increase to operating expenses of \$1,466.

Based on the above adjustments, the Commission finds Barkley Lake's reasonable net operating income to be:

| | | |
|---|---|--------------------------------|
| 5 | Depreciation Adjustment - Existing Plant | \$<52,955> |
| | Depreciation Adjustment - Proposed Plant | 7,052 |
| | Depreciation Adjustment - Capitalized Items | 249 |
| | Net Depreciation Adjustment | <u><u>\$<45,654></u></u> |

| | <u>Barkley Lake Proposed</u> | <u>Commission Adjustments</u> | <u>Commission Adjusted</u> |
|----------------------|--------------------------------------|-----------------------------------|--------------------------------|
| Operating Revenue | \$296,132 | -0- | \$ 296,132 |
| Operating Expenses | <u>290,848</u> | <u><41,342></u> | <u>249,506</u> |
| Net Operating Income | <u>\$ 5,284</u> | <u>\$ 41,342</u> | <u>\$ 46,626</u> |

REVENUE REQUIREMENTS

Barkley Lake has debt service requirements of \$51,616 on its two existing bonds, \$30,305 on its proposed bonds, and \$43,656 on its notes payable, for total debt service requirements of \$125,577. Barkley Lake's adjusted operating income of \$46,626 plus interest income of \$9,578 results in net revenue available for debt service coverage ("DSC") of \$56,204. This represents a DSC of 0.45X which the Commission finds unfair, unjust and unreasonable. The Commission is of the opinion that a DSC of 1.2X on Barkley's Lake's bonds and 1.0X on Barkley Lake's notes payable is fair, just and reasonable in that they will provide revenue sufficient to service Barkley Lake's debt and provide adequate cash flow to meet its operating expenses and reserve requirements.

In order to achieve the DSC found fair, just and reasonable herein, the Commission has determined that Barkley Lake is in need of a net operating income of \$141,961.⁶ Thus, Barkley Lake needs

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|--------------|---|------------------|
| ⁶ | Existing Bonds DSC Requirement (\$51,616 X 1.2) | \$ 61,939 |
| | Proposed Bonds DSC Requirement (\$30,305 X 1.2) | 36,366 |
| | Notes Payable DSC Requirement (\$43,656 X 1.0) | <u>43,656</u> |
| | Reasonable Net Operating Income | <u>\$141,961</u> |

additional revenues on an annual basis of \$85,757 determined as follows:

| | |
|---------------------------------|------------------|
| Reasonable Net Operating Income | \$141,961 |
| Net Revenue Available for DSC | <u>56,204</u> |
| Additional Revenue Requirements | <u>\$ 85,757</u> |

The Commission apprises Barkley Lake that, while Barkley Lake was given full DSC on its notes payable outstanding in this proceeding, the Commission will review Barkley Lake's actual DSC upon repayment of these notes payable to determine the appropriateness of Barkley Lake's rates on a pro forma basis.

WATER LOSS

The 1983 Annual Report shows a water loss of 26.42 percent. This exceeds the 15 percent allowed by the Commission for rate-making purposes. During cross-examination, it was noted that water loss at times exceeded 37 percent during the test period. Barkley Lake stated that this excessively high level of water loss was due to major breaks, many of which could be traced to faulty lines or poor installation. It was also noted that many of these breaks had occurred where water mains had been constructed as underwater crossings of inlets of Lake Barkley.

Barkley Lake stated at the hearing that its plans for finding and fixing leaks would include the installation of meters for measuring flowage volumes at strategic locations in its water distribution mains. During the hearing, Barkley Lake was informed that the Commission would give limited consideration to the cost of excessive water loss in its rate-making treatment if it applied to participate in the Commission's demonstration project for water

loss reduction. As of this date, Barkley Lake has failed to apply for this project. Although no rate-making adjustment has been made in the case due to the continuing seriousness of Barkley Lake's water loss, the Commission chides Barkley Lake for not approaching the Commission regarding the project. Barkley Lake's plans are commendable, but without immediate action this serious problem cannot be controlled. Thus, Barkley Lake should immediately apply to the Commission's Division of Engineering and Services for participation in this demonstration project.

RATE DESIGN

Billing Analysis

Barkley Lake's billing analysis filed with its application produces operating revenues in the amount of \$299,946, while the income statement for the test year shows operating revenues in the amount of \$292,209. In response to Item No. 7 of the request for information dated February 2, 1984, Barkley Lake indicated that the billing analysis is an average while the income statement reflects exact billing. Therefore, the Commission has adjusted the billing analysis by \$7,737 in order to reflect actual test year revenue.

FINDINGS AND ORDERS

The Commission, after consideration of the application and evidence of record and being advised, is of the opinion and finds that:

1. The rates proposed by Barkley Lake will generate revenues greater than those allowed herein and should be denied upon application of KRS 278.030.

2. The rates in Appendix A are the fair, just and reasonable rates to be charged by Barkley Lake on and after the date of this Order.

3. Public convenience and necessity require that the construction proposed in the application and record be performed and that a certificate of public convenience and necessity be granted.

4. The proposed construction includes a 450,000-gallon water storage tank, a booster pumping station, 4 service connections, about 1.5 miles of 6-inch water main and miscellaneous appurtenances.

5. The low bids received for the proposed construction totaled \$268,995 which will require about \$363,500 in project funding after allowances are made for fees, contingencies, and other indirect costs.

6. Any deviations from the construction herein approved which could adversely affect service to any customer should be subject to the prior approval of this Commission.

7. Barkley Lake should obtain approval from the Commission prior to performing any additional construction not expressly certificated by this Order.

8. Barkley Lake should file with the Commission duly verified documentation which shows the total costs of construction including all capitalized costs (engineering, legal, administrative, etc.) within 60 days of the date that construction is substantially completed. The construction costs should be classified into appropriate plant accounts in accordance with the Uniform

System of Accounts for Water Utilities prescribed by this Commission.

9. Barkley Lake's contract with its Engineer should require the provision of full-time resident inspection under the general supervision of a professional engineer with a Kentucky registration in civil or mechanical engineering. The supervision and inspection should insure that the construction work is done in accordance with the contract plans and specifications and in conformance with the best practices of the construction trades involved in the project.

10. Barkley Lake should require the Engineer to furnish a copy of the record plans and a signed statement that the construction has been satisfactorily completed in accordance with the contract plans and specifications within 60 days of the date of substantial completion of this construction.

11. A 5/8-inch x 3/4-inch meter should be the standard customer service meter for all new customers and should be installed at all points of service unless the customer provides sufficient justification for the installation of a larger meter.

12. Barkley Lake should establish and maintain a program for reduction of its unaccounted-for water. The objectives of this program should be: (1) the reduction of unaccounted-for water to 15 percent or less of the amount produced and (2) to maintain an effective program for holding its unaccounted-for water at 15 percent or less. Further, Barkley Lake should file "Water Accountability Reports" with this Commission on a monthly basis until these objectives have been reached. These reports

should be addressed to the Director of the Division of Engineering and Services.

13. Barkley Lake should file with the Commission a copy of all contractual agreements for the provision of services or the purchase of services which are subject to the approval of this Commission.

14. The proposed borrowing of \$322,000 is for lawful objects within the corporate purposes of Barkley Lake, is necessary and appropriate for and consistent with the proper performance of services to the public by Barkley Lake, and will not impair its ability to perform these services.

15. The financing secured by Barkley Lake for this project will be needed to pay for the work herein approved. Barkley Lake's financing plan should, therefore, be approved.

IT IS THEREFORE ORDERED that the rates proposed by Barkley Lake be and they hereby are denied.

IT IS FURTHER ORDERED that the rates in Appendix A are the fair, just and reasonable rates to be charged by Barkley Lake for water service rendered on and after the date of this Order.

IT IS FURTHER ORDERED that Barkley Lake shall file with this Commission within 30 days of the date of this Order its revised tariff sheets setting out the rates and charges approved herein.

IT IS FURTHER ORDERED that Barkley Lake be and it hereby is granted a certificate of public convenience and necessity to proceed with the waterworks construction projects described by the plans and specifications of record herein approved.

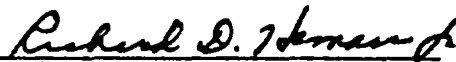
IT IS FURTHER ORDERED that Barkley Lake's financing plan for the proposed construction be and it hereby is approved.

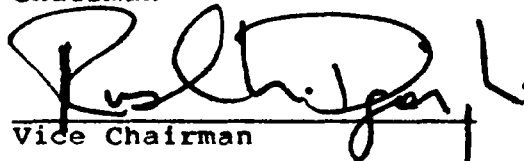
IT IS FURTHER ORDERED that Barkley Lake shall comply with Findings 6 through 13 herein as if each of these findings were also ordered.

Nothing contained herein shall be deemed a warranty of the Commonwealth of Kentucky, or any agency thereof, of the financing herein authorized.

Done at Frankfort, Kentucky, this 28th day of January, 1985.

PUBLIC SERVICE COMMISSION


Chairman


Vice Chairman


Commissioner

ATTEST:

Secretary

APPENDIX A

APPENDIX TO AN ORDER OF THE PUBLIC SERVICE COMMISSION IN CASE NO. 9221 DATED 1/28/85

The following rates are prescribed for the customers in the area served by Barkley Lake Water District. All other rates and charges not specifically mentioned herein shall remain the same as those in effect under authority of the Commission prior to the effective date of this Order.

RATES: Monthly

5/8-Inch Connection

| | | | |
|-------|-----------------|---------|-------------------|
| First | 2,000 gallons | \$ 7.10 | Minimum Bill |
| Next | 3,000 gallons | 1.90 | per 1,000 gallons |
| Next | 5,000 gallons | 1.70 | per 1,000 gallons |
| Next | 40,000 gallons | 1.50 | per 1,000 gallons |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

3/4-Inch Connection

| | | | |
|-------|-----------------|---------|-------------------|
| First | 3,000 gallons | \$ 9.00 | Minimum Bill |
| Next | 2,000 gallons | 1.90 | per 1,000 gallons |
| Next | 5,000 gallons | 1.70 | per 1,000 gallons |
| Next | 40,000 gallons | 1.50 | per 1,000 gallons |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

1-Inch Connection

| | | | |
|-------|-----------------|----------|-------------------|
| First | 5,000 gallons | \$ 12.80 | Minimum Bill |
| Next | 5,000 gallons | 1.70 | per 1,000 gallons |
| Next | 40,000 gallons | 1.50 | per 1,000 gallons |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

1 1/2-Inch Connection

| | | | |
|-------|-----------------|----------|-------------------|
| First | 10,000 gallons | \$ 21.30 | Minimum Bill |
| Next | 40,000 gallons | 1.50 | per 1,000 gallons |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

2-Inch Connection

| | | | |
|-------|-----------------|----------|-------------------|
| First | 20,000 gallons | \$ 36.30 | Minimum Bill |
| Next | 30,000 gallons | 1.50 | per 1,000 gallons |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

3-Inch Connection

| | | | |
|-------|-----------------|----------|-------------------|
| First | 50,000 gallons | \$ 81.30 | Minimum Bill |
| Next | 50,000 gallons | 1.30 | per 1,000 gallons |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

Christian County Water District Lake Barkley State Park

| | | | |
|-------|-----------------|----------|-------------------|
| First | 100,000 gallons | \$146.30 | Minimum Bill |
| Next | 400,000 gallons | 1.25 | per 1,000 gallons |
| Over | 500,000 gallons | 1.20 | per 1,000 gallons |

There is a \$2.40 per customer surcharge for the Eastern portion of the District.